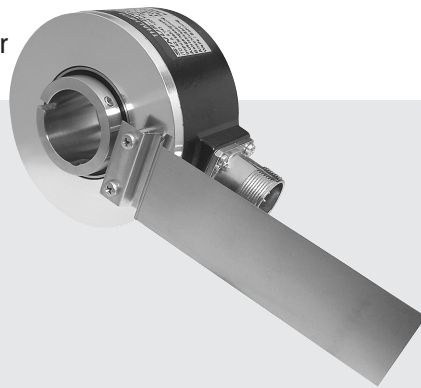
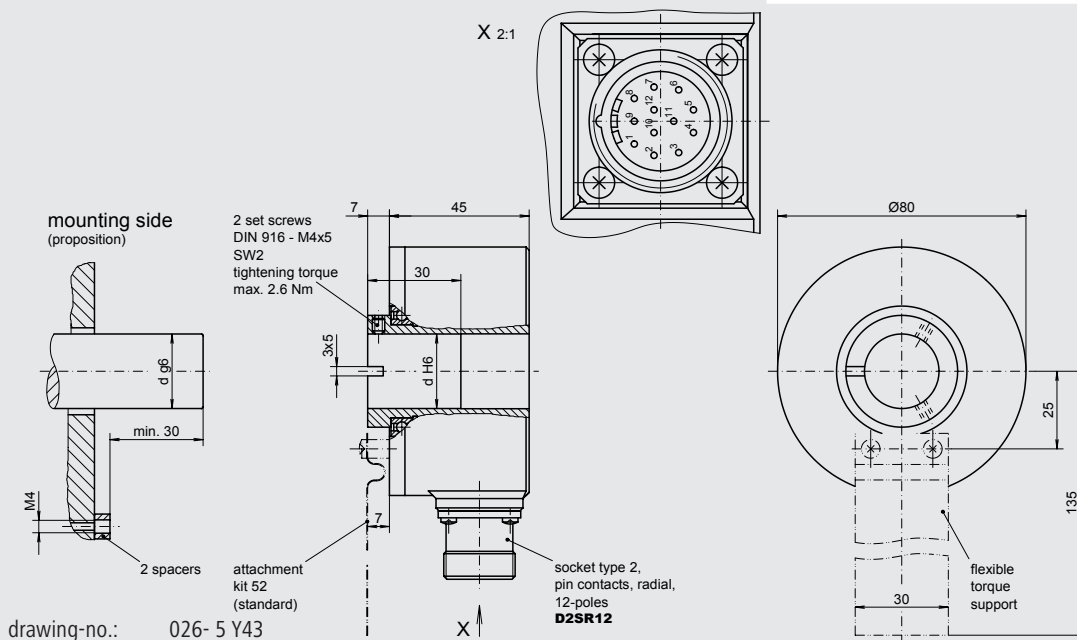


Sine wave incremental encoder with hollow shaft



Features

- SINE WAVE-incremental encoder with hollow shaft going through
- Number of pulses up to 2048 pulses/rev.
- Mounting at torque support
- Sine wave output signals 1 V_{pp}
- Socket radial



Mechanical data

Design	A 4		A 4
Attachment kit	52	standard, (ref. data sheet »Attachment kit's ...«)	52
Housing	aluminium, black, powder coated		
Protection	IP 65	according to DIN EN 60 529	IP65
Construction principle	LED with glass slotdisc		
max. revolution (mechanical)	$n_{max} \leq 5000 \text{ min}^{-1}$	(observe limit frequency)	
Permissible motor-shaft play	axial $\leq 0.25 \text{ mm}$ radial $\leq 0.1 \text{ mm}$		
Starting torque	at 20 °C $\leq 1.5 \text{ Ncm}$		
Vibration	55... 2000 Hz $\leq 100 \text{ m/s}^2$	according to DIN IEC 60 068, part 2-6	
Shock	11 ms $\leq 300 \text{ m/s}^2$	according to DIN IEC 60 068, part 2-27	
Hollow shaft diameter	d 25 mm	(standard), 17 mm to 27 mm possible	25
Weight	approx. 600 g		

Electrical data

Number of pulses	Z	1024, 2048 pulses/revolution (other on request)	XXXX
Electronic version (output signals)	sine	with amplifier stage, supply voltage: $U_B = 5 \text{ VDC} \pm 10\%$ (polarity protected) output amplitude A+B: $1 V_{pp}$ at $Z_0 = 120 \Omega$ output amplitude N: approx. 0.4 V (useable part) at $Z_0 = 120 \Omega$	M
Output signals	A, B, N	2 sine wave signal trains phase shifted by 90° electr. + zero pulse	NI
Limit frequency	f_G	180 kHz (-3 dB)	
Current consumption (no-load)	I_{max}	$\leq 90 \text{ mA}$	
Permissible cable length		$\leq 150 \text{ m}$ (Baumer Thalheim cable)	
Type of connection		socket type 2, pin contacts, radial, 12-poles	D2SR12
Operating temperature range		-20°C to $+85^\circ \text{C}$	S
Permissible relative humidity		$\leq 90\%$ (condensation not permitted)	

Options

Electronic version (output signals)	sine	with amplifier stage, supply voltage: $U_B = 8 - 26 \text{ VDC} \pm 10\%$ (polarity protected) output amplitude A+B: $1 V_{pp}$ at $Z_0 = 120 \Omega$ output amplitude N: approx. 0.4 V (useable part) at $Z_0 = 120 \Omega$	S
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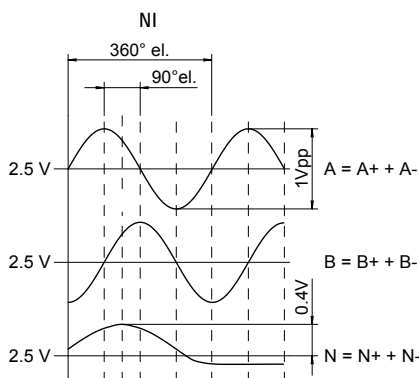
Accessories

Connector, for version D2SR12	connector type 2, bush contacts, straight, 12-poles	S2BG12
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Connection table

PIN-no.	signals
PIN 5	A +
PIN 6	A -
PIN 8	B +
PIN 1	B -
PIN 3	N +
PIN 4	N -
PIN 12	$+U_B$
PIN 10	0 V
PIN 2	$+U_{sensor}$
PIN 11	0 V _{sensor}
PIN 7	NC
PIN 9	NC

Output signal diagram



Pulse trains: Clockwise rotation when looking at the end of the shaft (mounting side).

Ordering example:

ITD 42 Incremental encoder ITD 42	A 4 Design A 4	Y43 Mechanical variant Y43 = look at the drawing	1024 Number of pulses 1024 pulses/revolution	M Electronic version signal amplitude = $1 V_{pp}$	NI Output signals A-, B-, N-track	D2SR12 Type of connection socket type 2, pin contacts, radial, 12-poles	S Operating temperature range -20°C to $+85^\circ \text{C}$	25 Hollow shaft diameter 25 mm	IP65 Protection IP65	52 Attachment kit variant 52
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